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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,151	10/17/2000	Bradley Engstrand	MOT-P-00-001	2732

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EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,151

Applicant(s)

ENGSTRAND, BRADLEY

Examiner

Thanh X Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 12, 2003 has been entered.

Claims 1-22 are currently pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fox et al. (U.S. Patent 5,705,742).

Regarding claims 1 and 9, Fox et al. disclose (see Figures 1 and 8) an apparatus for measuring displacement, comprising: a machine element (9) having a body (see Figure 2) defining an interior wherein the body has an interior surface and a length defined between a first end and a second end; a first wall at the first end; a second wall at the second end substantially enclosing the interior; a shaft element (at 45) movable within the machine element; a head element (valve 45) attached to the shaft element

adjacent to the interior surface of the machine element; a light source (laser) on the interior surface of the machine element; and a sensor (within 84, not shown) on the interior surface of the machine element and positioned to detect intensity of light within the machine element wherein the intensity of light corresponds to a position of the head element within the machine element at any point between the first end and the second end.

4. Claims 17, 18 and 20, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Segerson et al. (U.S. Patent 4,902,903).

Regarding claims 17, 18 and 20, Segerson et al. disclose (see Figures 3 and 4) a method for measuring displacement of a machine element, comprising: providing a machine element (40) having a body (within 40) defining an interior wherein the body has an interior surface and a length defined between a first end (left side) and a second end (right side); providing a shaft element (16) capable of movement within the machine element; attaching a head element (at 18; not labeled) to the shaft element; positioning the head element adjacent to the interior surface of the machine element; (see Figure 4) attaching a light source (44E) to the machine element on a first side (left) of the head element; attaching a sensor (44R) to the machine element on a second side (right) of the head element wherein the first side and the second side are not the same; and measuring intensity of light within the machine element from reflected light detected by the sensor. Segerson et al. also disclose (see Figure 3) moving (28) the shaft element; and producing an output signal as the shaft element moves within the machine element. Segerson et al. further disclose (see Figure 4) a seal (55) exterior to the machine

element.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Algers et al. (U.S. Patent 6,058,776).

Regarding claims 11-14, Algers et al. disclose (see Figure 1) an apparatus for cleaning a machine component, comprising: a machine element having a body defining an interior wherein the body has an interior surface and a length defined between a first end (at 15) and a second end (at 9) wherein the first end has an interior wall and an exterior wall opposite the interior wall; a shaft element (6) movable within the machine element; a head element (16) attached to the shaft element and adjacent to the interior surface of the machine element; and a first brush (see column 2, lines 53-55) positioned to contact the shaft element. Algers et al. also disclose (see Figure 1) a seal (4) disposed around the shaft and a coating (5) on the shaft element. Algers et al. also disclose a brush ring, which would inherently include a second brush. Algers et al. do not specifically disclose the brush on the exterior wall. However, Algers do teach the brush combined with the sealing ring (4). Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the brush on the

exterior wall in the apparatus of Algers et al. to scrap particles outside the machine element in order to prevent the machine element from fouling and eventually clogging.

7. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Algers et al. in view of Fox et al.

Regarding claims 15 and 16, Algers et al. disclose the claimed invention as set forth above. Algers et al. do not specifically disclose a light source and sensor as claimed. Fox et al. teaches attaching a light source and sensor to measure a displacement of a head element. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a light source and sensor as claimed in the apparatus of Algers et al. in view of Fox et al. to verify correct operation of the machine element by monitoring the position of the head element.

8. Claims 2, 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Smietana (U.S. Patent 5,231,959).

Regarding claims 2, 3 and 10, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a coating on the shaft element, head element or the interior surface. Smietana teaches (see column 3, lines 15-20) a coating on a shaft element, head element and interior wall of a machine element. Smietana further recognizes that such coatings prevent galling or provides for a more resilient surface. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the coatings as claimed in the apparatus of Fox et al. in view of Smietana to prevent galling or to provide elements that are more resilient to wear.

9. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Lowi, Jr. (U.S. Patent 5,799,629), hereinafter, Lowi.

Regarding claim 4, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a seal around the shaft. Lowi teaches (see Figure 1) providing a seal (30) at an end wall. Thus, Lowi recognizes that seals help isolate the interior of the machine element from the exterior. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a seal as claimed in the apparatus of Fox et al. in view of Lowi to seal the interior of the machine element from dirt and particles, and thereby improve the operation of the device.

Regarding claim 6, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a brush. Lowi teaches (see Figure 6) a brush (77) attached to the machine element. Lowi recognizes that brushes help clean the shaft in the machine element. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide brushes in the apparatus of Fox et al. in view of Lowi to clean the shaft element of the machine element and improve the operation of the device.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Lowi, and further in view of Brunet et al. (U.S. Patent 6,170,573).

Regarding claim 7, Fox et al. in view of Lowi disclose the claimed invention as set forth above. Fox et al. and Lowi do not specifically disclose a wire brush. Brunet et al. teach (see column 10, lines 45-60) a wire brush for cleaning a machine element. Thus, Brunet et al. recognize that wire brushes are cost effective in cleaning machine

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elements. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a wire brush in the apparatus of Fox et al. in view of Lowi and Brunet et al. to more effectively clean the device.

11. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al.

Regarding claims 5 and 8, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a second light source or sensor. However, it has been held that a mere duplication of parts has no patentable significance. *In re Harza*, 104 USPQ 378. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a second light source or sensor attached at the first or second wall of Fox et al. to provide additional illumination and detection to improve detection.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segerson et al.

Regarding claim 19, Segerson et al. further disclose (see column 3, lines 5-10) providing a processing unit (control means) that receives the output signal. Segerson et al. do not specifically disclose displaying the output signal. However, displaying detector signals are notoriously well known in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to display the output signal in the method of Segerson et al. to provide information to operators for ensuring the proper operation of the device.

13. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segerson et al. in view of Lowi.

Regarding claims 21 and 22, Segerson et al. disclose the claimed invention as set forth above. Segerson et al. do not specifically disclose a first brush or a second brush. Lowi teaches (see Figure 6) a first and second brush (77) attached to the machine element. Lowi recognizes that brushes help clean the shaft in the machine element. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide brushes in the apparatus of Segerson et al. in view of Lowi to clean the shaft element of the machine element and improve the operation of the device.

Response to Arguments

14. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments with respect to claims 17-22 have been fully considered but they are not persuasive.

Applicant asserts that Segerson does not disclose attaching a light source on a first side of the head element and a sensor on a second side. Examiner disagrees. As stated above, Figure 4 clearly shows the light source (44E) is on a left side (a first side) and the sensor (44R) is on a right side (a second side) of the head element.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (571) 272-

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2441. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (571) 272-2444. The fax phone number for the organization where the application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
January 15, 2004



Thanh X. Luu
Primary Examiner